

I. General Remarks Concerning This Response

Claims 1-51 are currently pending. In this response, no claims are amended; no claims are added; and no claims are canceled. Reconsideration of the claims is requested.

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II. 35 U.S.C. § 102(e)-Anticipation-Aguilar et al.

The Office action has rejected claims 1 and 3-7 under 35 U.S.C. § 102(e) as anticipated by Aguilar et al., "Method and system for automatically configuring the boot process of a computer having multiple bootstrap programs within a network computer system", U.S. Patent Number 6,490,677 B1, filed 09/16/1999, issued 12/03/2002. This rejection is traversed.

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Applicant asserts that Aguilar et al. cannot be used as an anticipatory reference because Aguilar et al. fails to disclose some claim elements of the present patent application.

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Independent claim 1 reads as follows (emphasis added):

1. A method within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:

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receiving at the server device a boot request from the client device, **wherein the client device requires boot files uniquely configured for the client device;**

in response to receiving the boot request, generating a boot response to the client device that directs the client device to download boot files from the server device; and

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sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device, wherein the server device is one of a plurality of boot servers on the network, and **wherein the server device is able to respond to a boot request from all client devices on the network.**

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The rejection relies on Aguilar et al. at column 4, line 35, to column 5, line 45, for disclosing the elements of independent claim 1 and dependent claims 3-6, which reads (emphasis added):

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When a network computer is initially installed on a WAN, a setting is determined indicating which of multiple bootstrap programs stored in flash ROM 42 to execute. Preferably, a basic input/output system (BIOS) based bootstrap program and a non-BIOS based bootstrap program are provided in flash ROM 7. BIOS based bootstrap programs support BIOS based operating systems. Non-BIOS based bootstrap programs support non-BIOS based operating systems.

With reference now to FIG. 3, there is depicted a block diagram of a network system in accordance with the method and system of the present invention. Network system 56 includes multiple network computers 50a-50n, or clients, with access to multiple servers 52a-52n by network link 54. As described in FIG. 1, each network computer 50a-50n includes a communications adapter by which communication within the network system.

Each of network computers 50a-50n preferably access services and software, including an operating system, from at least one of servers 52a-52n. Preferably, the client-server network communicates utilizing the Dynamic Host Configuration Protocol (DHCP), including Preboot execution Environment (PXE) of Intel Corporation, Inc. and Remote Program Load (RPL). Alternative network arrangements may also be utilized for providing software to network computers, as will be appreciated by one skilled in the art. Further, additional components may be added to a network arrangement.

With respect to the present invention, as depicted in FIG. 2, each of network computers preferably 50a-50n includes multiple bootstrap programs stored in the flash ROM of each network computer 50a-50n. **Further, each of servers 52a-52n preferably provides one of multiple available operating systems.** When a network computer 50a-50n is initially placed on network link 54, the user may be prompted to select a desired operating system or default to the first available operating system. **The newly placed network computer, through a sequence of automatic operations, searches the network for an available server containing the desired operating system or default. Once detected, a particular bootstrap program (either BIOS or non-BIOS) and an operating system kernel located within a particular server are stored as part of the boot process configuration, preferably in NVRAM of the network computer.** By storing the selected bootstrap program and identity of the server storing the operating system kernel, if rebooted, the network computer is configured to automatically choose

the selected bootstrap program and access the selected operating system at the location of the operating system kernel.

5 In particular, in utilizing the DHCP protocol, a network computer may broadcast a DHCP request for a server connection to each of servers 52a-52n. Any servers which can provide service to the requesting network computer returns a DHCP DISCOVER protocol response. **From each response, the type of OS provided by the server can be**  
10 **determined.** For example, a DHCP response may indicate a PXE type server and the address thereof, indicating that the server is prepared to supply the next bootstrap service **(e.g. delivery of an operating system executable image or operating system kernel)**. Since PXE type servers provide a BIOS based OS, the BIOS bootstrap program with the address provided by the server are utilized to boot the OS. If successful, the configuration settings in NVRAM are changed to utilize the successful boot settings. However, if a non-PXE DHCP response and an address are returned with the  
15 protocol response, the non-BIOS based bootstrap program and address will be utilized to perform the boot and if successful configured in NVRAM. If there is not a DHCP response to the DHCP broadcast request, an RPL Find Frame request will be broadcast. If there is a response to the  
20 RPL Find Frame request, the system will reboot with the BIOS bootstrap program and attempt to boot the OS. If the boot is successful, the BIOS bootstrap program will be configured in NVRAM for use with all future boots.

30 Applicant includes the entire passage from Aguilar et al. in order to illustrate that Aguilar et al. does not disclose some elements of the presently claimed invention, notwithstanding the argument in the rejection. Although the present invention and the system that is disclosed in Aguilar et al. can both use the  
35 Preboot eXecution Environment (PXE) in some manner, the present invention has additional requirements that the system that is disclosed in Aguilar et al. cannot fulfill. More specifically, as noted above in the emphasized portions of Aguilar et al., a booting network computer searches the network for an available  
40 server containing the desired operating system or default; the

operating system image that is downloaded would be available and usable by any network computer without distinction.

This can be contrasted with the manner in the present invention operates by referring to the specification of the present patent application from page 24, line 19, to page 25, line 25, which states (emphasis added):

... As should be apparent from the description of Figures 2A-2D above, the PXE protocol specifies that the client and the server must perform certain operations in certain sequences yet allows wide discretion in the manner in which the server-side operation can be implemented. **The present invention exploits this flexibility by implementing a different configuration for the DHCP service, the Proxy DHCP service, and the boot server. In the present invention, the DHCP service and the Proxy DHCP service are implemented on separate server machines, which is similar to the implementation shown in Figure 2D, but the Proxy DHCP service is implemented on the same server as the boot service.** To avoid confusion between the different implementations and to denote the novelty of the manner in which the PXE-compatible server-side operations are performed by the present invention, **the following description substitutes the typical "Proxy DHCP service" terminology with the term "PXE proxy service" while describing the present invention.**

In the present invention, a PXE Proxy service is installed on all boot servers. The PXE Proxy service is a server that provides only the PXE remote boot information to the client machines while the actual client IP address is obtained from a standard DHCP server.

In prior art implementations of the PXE protocol, a Proxy DHCP service could supply a list of one or more boot servers in the DHCPOFFER. In contrast, in the present invention, each PXE Proxy service is configured to "redirect" the client to the boot service on the same server machine on which the responding PXE Proxy service is executing. In other words, the Boot Server list in the DHCPOFFER contains a single boot server; each PXE Proxy service is configured to point to its own machine as the boot server. In order to do so, any one of the multiple boot servers on the network must be capable of servicing a client request to act as its boot server.

In the present invention, the client machines require unique files that cannot be shared between the client machines without distinction; although a set of files for a given client machine may include an operating system image, the unique files are not simply generic operating system images that would be usable by any client machine that needs to boot a particular type of operating system. These requirements of the present invention are reflected in the current claims, which contain the features "wherein the client device requires boot files uniquely configured for the client device" and "wherein the server device is able to respond to a boot request from all client devices on the network". Since Aguilar et al. does not disclose the claimed abilities, the argument in the rejection that asserts that Aguilar et al. discloses the claim elements cannot be correct.

With respect to the dependent claims, Aguilar et al. does not disclose, at a minimum, the subject matter in claim 1 from which these dependent claims depend. Thus, Aguilar et al. also fails to disclose the features of the dependent claims because these dependent claims include the features of claim 1.

Aguilar et al. clearly does not disclose features as required by the claims. As stated at MPEP § 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Hence, Aguilar et al. cannot be used as an anticipatory reference, and the rejection of claims 1 and 3-7 has been overcome, and Applicant requests the withdrawal of the rejection.

**III. 35 U.S.C. § 103—Obviousness over Aguilar et al.**

Claims 2, 9-14, et seq. are rejected under 35 U.S.C. § 103(a) as unpatentable over Aguilar et al. in view of Yoshida et al., "File Server Load Distribution System and Method", U.S. Patent 6,401,121 B1, filed 11/15/1996, issued 06/04/2002. This rejection is traversed.

Applicant respectfully disagrees with the rejections and their supporting arguments. More importantly, though, **the rejection must be withdrawn** because Aguilar et al. does not qualify as prior art with respect to an obviousness rejection.

All rejections under 35 U.S.C. § 103(a) logically rely on the relationship of the applied prior art to the claimed invention under 35 U.S.C. § 102. In other words, before the prior art can be properly applied against the claimed invention with respect to 35 U.S.C. § 103(a), the prior art must have a specific, statutorily defined relationship to the claimed invention as set forth in one of the subsections of 35 U.S.C. § 102. Some of the subsections of 35 U.S.C. § 102 statutorily deny patentability of a claimed invention if prior art exists that identically discloses the claimed invention. If there is prior art that does not identically disclose the claimed invention, then 35 U.S.C. § 103(a) can be used to prevent patentability if the claimed invention is obvious in view of the prior art. The relationship between 35 U.S.C. § 103(a) and 35 U.S.C. § 102 is stated in the statute:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

The pending rejection uses Aguilar et al. to deny patentability of the present invention under 35 U.S.C. § 103(a) because of an assumption underlying the grounds of rejection that  
5 Aguilar et al. qualifies as prior art under 35 U.S.C. § 102(e) for supporting a rejection under 35 U.S.C. § 103(a). Aguilar et al. was filed on 09/16/1999 and issued on 12/03/2002, whereas the present invention was filed on 04/27/2001.

However, this assumption is incorrect. An inspection of  
10 Aguilar et al. reveals that this patent is currently assigned to International Business Machines Corporation (IBM). The subject matter of Aguilar et al. was owned by IBM and subject to an obligation of assignment to IBM at the time that the present invention was made. In addition, at that same time, the present  
15 invention was owned by IBM and subject to an obligation of assignment to IBM. Hence, the present invention and the subject matter in Aguilar et al. were owned by a common assignee, i.e. IBM, at the time that the present invention was made.

The American Inventors Protection Act (AIPA) of 1999 changed  
20 35 U.S.C. § 103(c), which applies to any patent application filed on or after the date of enactment, November 29, 1999.

35 U.S.C. § 103(c) states:

(c) Subject matter developed by another person, which  
25 qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

30 In other words, prior art that would otherwise qualify under 35 U.S.C. § 102(e) cannot be used to deny patentability under 35 U.S.C. § 103(a) if the prior art and the claimed invention were

commonly owned or subject to an assignment to a common assignee at the time of the invention.

35 U.S.C. § 103(c) is applicable to the present invention, and Aguilar et al. is disqualified as prior art against the present invention for any rejection under 35 U.S.C. § 103(a). Since the grounds of the pending rejection can no longer be based on the patent of Aguilar et al., **the pending grounds of rejection must be withdrawn.** Applicant kindly requests the withdrawal of the rejection of claims 2, 9-14, et seq..

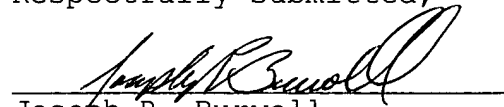
#### IV. Conclusion

It is respectfully urged that the present application is patentable, and Applicant kindly requests a Notice of Allowance.

For any other outstanding matters or issues, the examiner is urged to call or fax the below-listed telephone numbers to expedite the prosecution and examination of this application.

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Respectfully submitted,

  
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